

1 REMARKS

2 This case is the continued case for patent application number 09/274,057. This case was
3 allowed with claims which there are substantial similarity to the claims in the instant case.

4 While possibility exist that a terminal disclaimer may be necessary, because this is a separate
5 application, ti is considered not to fall into the category of cases where patenting the disclosure in
6 this patent would be prohibited as an identity with the prior allowed patent.

7 Hence, the challenge to the extent that it can be referred to as a challenge is to find supporting
8 language for all of the language in the allowed claims in the 09/274,057 case, or to the extent
9 necessary determine whether that language may have alternative language which would allow it to
10 be allowed or whether that language is necessary in order to find patentability.

11 The detailed office action deals with several queries related to the claim language and these
12 were addressed individually below.

13 I. In the first objection is the use of the word “Monomeric before application to the wood”.
14 In particular, the examiner points to Figure 7-10 which according to the examiner show a
15 polymerization prior to reacting to the wood.

16 The petitioner would show that this particular polymerization alleged to be shown is not a
17 requirement of the patent and in fact is not shown in Figures 15 and 16. In addition, Figure 12 does
18 not show a polymerization nor does Figure 11. While prior polymerization is a possibility it is
19 certainly not shown and suggested by all the pictures.

20 In addition it is important to look to the specification itself.

21 However, the existence of polymerize immediately before the reaction or is not secondary
22 to the patentability which is mainly tied to the creation of a strong acid in solution with the water and
23 the wood which is clearly and specifically shown in the specification on page 18 line 22 through

1 page 19 line 4. Polymerization doe not occur because of this key element

2 It is also shown throughout the specification in other claims, but citation to those other
3 references would be redundant.

4 Hence, because it is not new matter and because it is not necessary, the first rejection as to
5 claims 133 through 137 should be withdrawn.

6 However, claim 153 is recorded to describe this more clearly in the specification.

7 **II.** Second, the next objection is to the use of the word "hydrophilic" in the rejection of claims
8 132-156.

9 First, it is to be seen that a reaction with the water in the wood is clearly shown in the
10 specification as in Figures 15 and 16 among others.

11 In the specification on page 4 a description of the reaction as hypothesized is shown on lines
12 19 through line 4 on page 5. This refers to the fact that the chemical is "not carried into the wood,
13 but rather is drawn into the wood through reaction with the molecules of the wood". This continues
14 on page 5 at lines 13 through 17 stating "the chemical reaction of "WPTC"" is accelerated by the
15 reaction or mixture of water or other natural liquids inside a piece of wood. This acceleration pulls
16 the chemical into the wood, causes a molecular reaction and may expel excess water and other
17 liquids originally contained within the wood". Again on page 15 of the detailed description, this is
18 described because in "the preferred embodiment, catalyzed by using an acid or by creating an acid
19 during a reaction with the cellulose of water within the wood". In other locations this same type of
20 language appears, but it is always clear throughout the specification that the acid that is created is
21 created during a reaction with the wood and the reaction to quote page 17 lines 4 through 12 "draws
22 reactants into the wood". The specification shows the water is not a desired element of the solvent.
23 On page 28 lines 12 through 14 contain the description of this by stating "Water may not work as

1 well because it would compete with water in the wood unless a slower reaction was desired." At the
2 same time, the solvents are described on page 29 lines 5 through 7 as being "any water compatible
3 organic solvents such as dioxain."

4 Hence, the solvent can be described in terms which utilize the definition of hydrophilic
5 without being hydrophilic and that has been done in claims 132 through 156 which should deal with
6 the problem of new matter.

7 **III.** The third rejection is with the use of the word pro-catalyst which as used in the specification
8 is defined as a substance which reacts with water to produce a strong acid. Since the word pro-
9 catalyst is not used in the specification itself the use of a "catalyst which reacts with water within
10 the wood to produce a strong acid" is substituted in the claims which is shown in the disclosure
11 referred to above.

12 Because of the rejection this should withdraw to claims 132 through 156.

13 As to claim 134 through 137 the term self initiating exothermic reaction is objected to as new
14 matter.

15 On page 22 lines 4 through 6 the exothermic nature of the reaction is clearly described in the
16 language "Heat from the reaction will add pressure which will increase the saturation. The release
17 of pressure and heat will indicate a completed reaction." The fact that this is self initiating is further
18 shown on page 23 lines 4 through 9 where the reaction is described with steps which are "to prepare
19 the solution, put the wood in solution and allow the combination of the wood and solution to be
20 sealed so that the heat and pressure generated by the reaction for example between
21 methotrychlorosilane could build. When the pressure drops, indicating that the heat generated by
22 the reaction has ended or after a set period of time if the wood is not be fully treated then the wood
23 would be taken out of the solution". The language on page 4 and 5 describes as on page 5 on line

1 1 "the wood draws WPTC into the wood itself there is no need to use high pressure to treat the
2 wood.. The chemical reaction of WPTC is accelerated by the reaction or mixture of the water and
3 other natural liquids inside a piece of wood. This acceleration pulls the chemical into the wood,
4 causes a molecular reaction,...."

5 This is also shown on page 6 at lines 9 through 14 "by using the natural liquids of the wood
6 to literally pull the chemical into the wood while simultaneously reacting these liquids..."

7 Also this is shown on page 9 lines 16 through 18 which shown "the chemical itself may react
8 strongly with liquids".

9 On page 17 lines 4 through 12 this spontaneous reaction is described in graphic details.
10 Hence, the rejection number 4 as to a self initiating exothermic reaction is merely a semantic issue
11 and should be correctable by changing the language or by accepting the fact that the terms self
12 initiating and exothermic are inherent in the language which is used. "Heat generating" and "upon
13 applications for the wood" solves this and this rejection should be withdrawn.

14 V. The rejection number 5 is a rejection based ion the "concept that the acid catalyst...affects
15 the exothermic reaction of the functional group so the functional group binds from the tetravalent
16 atom across an oxygen of the cellulose hydroxyl group". This rejection applies claims 134 through
17 137.

18 An acid catalyst is clearly shown as indicated above. The exothermic reaction is also clearly
19 shown. The only question becomes can the language be changed in order to make it more clear.
20 Clearly, an exothermic reaction is shown since there is a reaction which generated heat and it could
21 be changed from exothermic to heat generating reaction. The bonding is also clearly shown where
22 in Figure 15 and 16 the tetravalent atom, in Figure 15 silicone, is shown bonded across an oxygen
23 of the cellulose hydroxyl group. It couldn't be shown much clearer than it is shown in Figure 15.

1 It is submitted that the rejection should be withdrawn.

2 It is clearly shown as indicated on page 29 lines 21 through 22 that the acid catalyst affects
3 a reaction of the functional group so that the functional group bonds from the tetravalent atom (here
4 silicon) across an oxygen of the cellulose hydroxyl group. There doesn't appear to be any way that
5 this could be more clear and the only issue as should the word exothermic be substituted with the
6 words "heat generating" although those two are considered to be equivalent.

7 **VI.** The sixth objection as to claims 140 through 141. These reject the pKa of the acid catalyst.
8 First it is noted that a strong acid is specifically indicated in the specification as being an element.
9 It is noted that the prior art clearly defines strong acids. In order to overcome the rejection the word
10 "pKa" may be taken out of claims 140 and 141 and may be substituted with language that says "an
11 acid environment for catalyzing the reaction of the silica (or trivalent atom) with the hydroxyl
12 group." As taught on page 17 lines 4 though 12. That language may be further refined by saying so
13 that the reaction draws the reactants into the wood as disclosed in the same paragraph.

14 This specific reference to strong acids (hydrochloric, phosphoric or sulfuric) by way of a
15 catalyst yielding a the acid and solution with the water in the wood is specifically taught on page 18
16 line 22 through page 19 line 4.

17 **VII.** The seventh rejection is a rejection based on the use of the language "pro-catalyst is a
18 molecule comprised of silicone and halogen". Clearly, the pro-catalyst described as a silicone and
19 an halogen us repeatedly disclosed in the specification and a reference to the same language from
20 pages 18 line 22 to page 19 line 4 indicate this. However, the word "Pro-catalyst" is removed and
21 substituted with language from the specification.

22 **VIII.** The eighth rejection is the "Kow" of the organic solvent which is not disclosed in the
23 specification and the solvent has to be described in claims 149 through 151 of being a solvent which

1 reduces or eliminates a reaction within the solvent until the solvent is applied to wood containing
2 water which is disclosed in the specification.

3 Claim 135 has been changed in order to eliminate the word trivalent.

4 Claim 155 shows the word "etc." deleted. Hydrophobic reagents is removed and the
5 typographical error showing "1525" instead of "152" in claim 155 is corrected.

6 The application is not filled with new matter as shown and as amended and is respectfully
7 submitted that a meaningful examination against the prior art it possible at this point in time.

8 Having addressed the claims, it is noted that the amendment to page 24 lines 22 through 25
9 in the April 25, 2003 the response has been corrected to show it is a full paragraph.

10 The amended drawings described in the November 18, 2003 amendment is addressed in
11 having the amended drawings are attached to this specification.

12 The brief description of the drawings shows that the drawings 6, 6a and 6b have been
13 renumbered 6a, 6b and 6c.

14 Item 6 and 8 in Figure 13 are deleted from Figure 13 as not being described in the
15 specification.

16 Figure 14's description on page 30 was amended on the 25th day of April, 2003 as follows:

17 "The R group in the above silicon donor us an alkyl group tanging in a carbon chain length
18 of 1-20 units in a straight chain or branched chain configuration. All these reagents are capable of
19 undergoing the similar transformation as depicted in Figure-7, or Figure 15. The reaction, the non-
20 halogen substituted silicon reagents in this general formula react only slowly and the completion of
21 the reaction would require a longer time, under ordinary conditions. However this process could be
22 enhanced by the inclusion of acid or base catalyst to the silicon reagents, as shown in Figure 15.
23 These catalyst may include, but are not limited to, a metal alkoxide or an acid such as meta-

1 phosphoric acid.

2 For all the reasons set forth above, it is believed that with these corrections the patent is in
3 a condition to issue.

4

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CONCLUSION

For all of the reasons advanced above, Applicant respectfully submits that the application is in condition for allowance and that action is earnestly solicited.

Respectfully Submitted,


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